

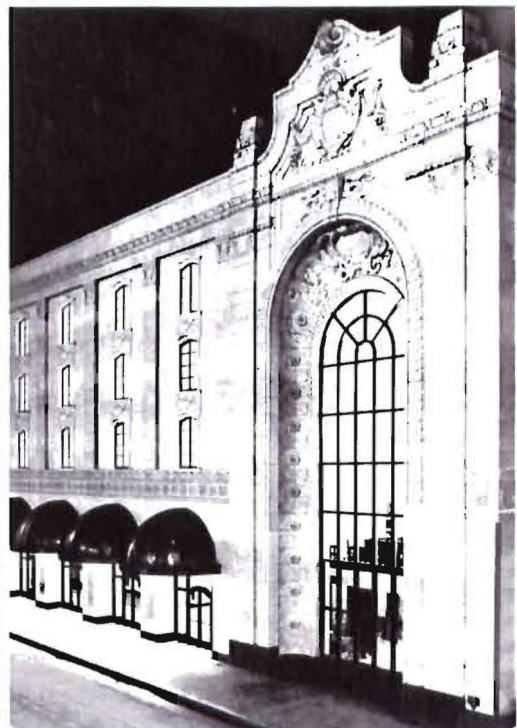
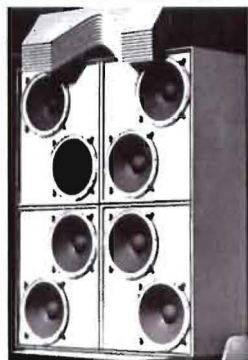
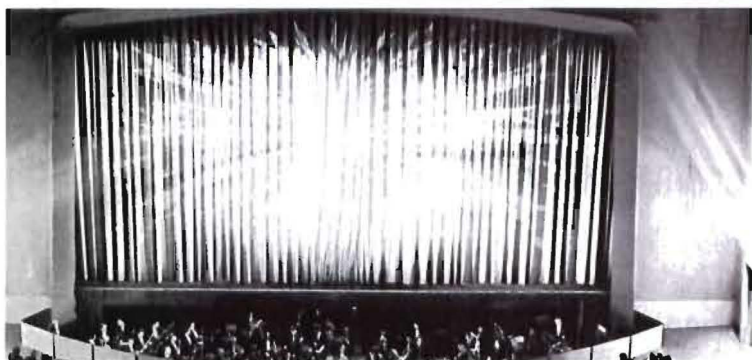
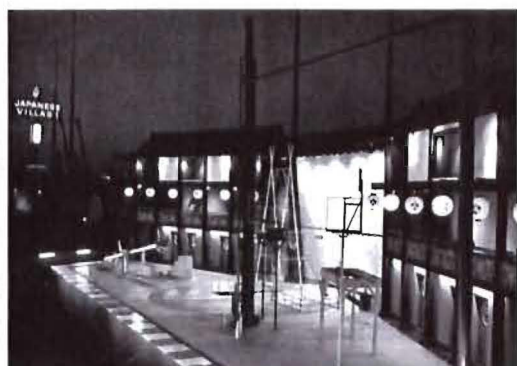
The JBL logo is centered within a red square, which is itself centered within a larger black rectangle. The logo consists of the letters "JBL" in a bold, white, sans-serif font. The "J" is stylized with a dot that is slightly offset to the left.

**JBL**

**Professional Series**



## JBL Professional Series Loudspeakers and Electronics



The products presented in this catalog set new standards for professional sound reproduction and reinforcement. JBL control room and studio monitors provide the most linear response available in limited size systems; they have been enthusiastically accepted by the recording industry. JBL low frequency horns and acoustical enclosures, like all JBL products, are meticulously designed and ruggedly built in JBL's own manufacturing facility. JBL transducers are sophisticated instruments, painstakingly crafted and assembled to watchmakers' standards of precision. JBL high frequency horns offer a selection of configurations, distribution patterns and crossover frequencies, for best possible results in any application. JBL electronics employ advanced solid state technology, field-proven in many industrial and professional sound installations. Rugged construction, versatile design features and superior performance identify JBL as a leader in the professional audio field.

JBL products are accurately rated. Transducer capacities are stated in continuous program power taken as twice continuous sine wave power (RMS), with proper loading of the diaphragm. All amplifier power specifications are quoted in continuous sine wave power (RMS). Detailed information and applications engineering data for any product in this catalog can be obtained by writing directly to: Professional Division, James B. Lansing Sound, Inc. 3249 Casitas Avenue, Los Angeles, California 90039 U.S.A.

2

## Special Duty Loudspeakers

Loudspeaker capacity stated in continuous program power taken as twice continuous sine wave power (RMS), with proper loading of the cone.

### 2105 5-inch Speech Range

Provides high acoustical output, smooth response and wide dispersion. Well suited to in-line arrays, inconspicuous distributed-speaker ceiling installations and natural sounding paging systems. Specifications:  $\frac{7}{8}$ -inch edgewound ribbon voice coil,  $2\frac{1}{2}$  lb. magnetic assembly, 150-15,000 Hz, 40 Watts program power, 8 ohms, 46.5 dB EIA sensitivity. Net weight 3 lbs.  $3\frac{1}{8}$ " deep.



### 2115 8-inch Linear Full Range

Smooth response through more than eight octaves. Provides uncolored, natural, wide-range performance with peak-free response and freedom from distortion in enclosures as small as 1.5 cubic feet. Specifications: 2-inch edgewound aluminum ribbon voice coil,  $6\frac{1}{2}$  lb. magnetic assembly, 35-18,000 Hz, 40 Watts program power, 16 ohms, 43 dB EIA sensitivity. Net weight  $7\frac{1}{2}$  lbs.  $3\frac{3}{8}$ " deep.

## Composite Loudspeakers

### 2145 12-inch Composite Transducer

Integrated two-way system consisting of a 12-inch low frequency transducer, separate 2-inch high frequency radiator and 3000 Hz crossover network. Specifications: 90° dispersion, 3-inch low frequency and  $\frac{7}{8}$ -inch high frequency voice coils, 40-15,000 Hz, 40 Watts program power, 8 ohms, 43 dB EIA sensitivity. Net weight 14 lbs.  $4\frac{1}{2}$ " deep.



### 2150 15-inch Composite Transducer

A two-way system made up of a 15-inch low frequency transducer and a 5-inch high frequency radiator integrated on a single chassis. Specifications: 120° dispersion, crossover 1200 Hz (3125 network optional), 4-inch low frequency and  $\frac{7}{8}$ -inch high frequency edgewound ribbon voice coils, 50-15,000 Hz, 60 Watts program power, 8 ohms, 51 dB EIA sensitivity. Net weight 18 lbs.  $5\frac{3}{8}$ " deep.



## Extended Range Loudspeakers

JBL Professional Series extended range loudspeakers are rugged, precision transducers for use in custom line arrays, distributed source installations or general purpose applications. All models have edgewound aluminum ribbon voice coils, individually machined magnetic assemblies and Dural high frequency center domes.

### 2110 8-inch

Specifications: 2-inch voice coil, 3 1/2 lb. magnetic assembly, 40-12,000 Hz usable frequency response, 20 Watts program power, 8 ohms, 48 dB EIA sensitivity. Net weight 4 lbs. 3 1/8" deep.



## Low frequency transducers

JBL Professional Series low frequency transducers feature 4-inch edgewound copper ribbon voice coils, individually machined pole pieces and highly efficient magnetic structures. Precise assembly tolerances allow minimal spacing between coil and pole pieces. When housed in properly designed enclosures, these transducers can handle sustained signals at high power levels without danger of mechanical damage or overheating.

Low frequency sensitivity ratings are based on a signal warbled from 100-500 Hz, rather than the conventional 1000 Hz single frequency, since these transducers are normally used below 800 Hz. Usable sensitivity of these low frequency transducers may, therefore, be substantially greater than that of loudspeakers with higher published ratings.



### 2120 10-inch

Specifications: 3-inch voice coil, 6 lb. magnetic assembly, 40-10,000 Hz, usable frequency response, 60 Watts program power, 8 ohms, 49 dB EIA sensitivity. Net weight 12 lbs. 3 1/8" deep.

### 2130 12-inch

Specifications: 4-inch voice coil, 11 lb. magnetic assembly, 40-10,000 Hz, usable frequency response, 100 Watts program power, 8 ohms, 52 dB EIA sensitivity. Net weight 13 lbs. 4 5/8" deep.

### 2135 15-inch

Specifications: 4-inch voice coil, 11 lb. magnetic assembly, 40-8000 Hz, usable frequency response, 100 Watts program power, 8 ohms, 54 dB EIA sensitivity. Net weight 14 1/2 lbs. 5 1/8" deep.

### 2205 15-inch Heavy Duty

Specifications: 11 lb. magnetic assembly, 30-2000 Hz, 150 Watts program power, 2205A 8 ohms, 2205B 16 ohms, 2205C 32 ohms, 47 dB sensitivity. Net weight 14 1/4 lbs. 5 1/8" deep.

### 2215 15-inch Linear Bass

Specifications: 19.5 lb. magnetic assembly,  $\pm 3$  dB 35-1200 Hz, 150 Watts program power, 16 ohms, 44 dB sensitivity. Net weight 22 1/2 lbs. 5 7/8" deep.

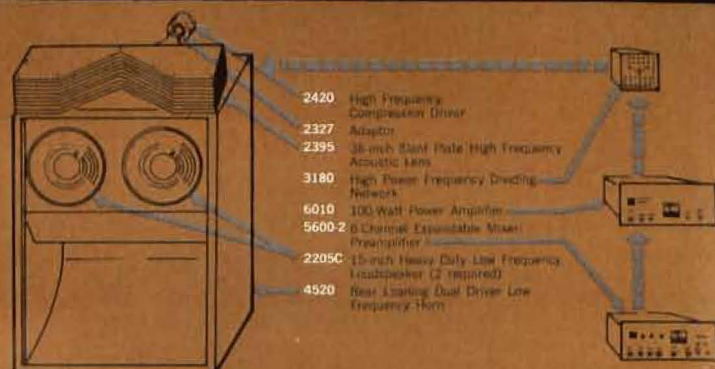
### 2220 15-inch High Efficiency

Specifications: 11 lb. magnetic assembly, 40-2000 Hz, 100 Watts program power, 2220A 8 ohms, 2220B 16 ohms, 2220C 32 ohms, 52 dB sensitivity. Net weight 14 1/4 lbs. 5 1/8" deep.

## Flexibility—a necessity for professional installations.

Every professional sound installation is unique: some routine, some difficult and some almost impossible. JBL Professional Equipment is engineered to provide the required flexibility, reliability and ease of installation for any acoustic environment. Possible combinations of JBL components are as numerous as the required solutions.

The systems shown here are a few suggestions for specific applications.



Small Auditorium

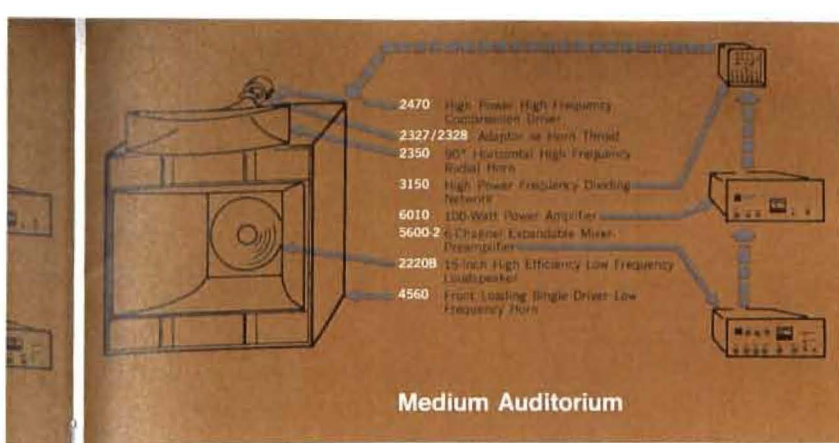


Portable

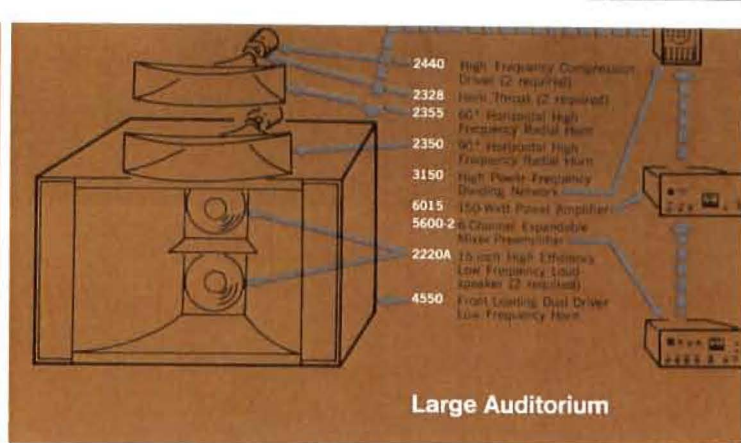


Discotheque or Club

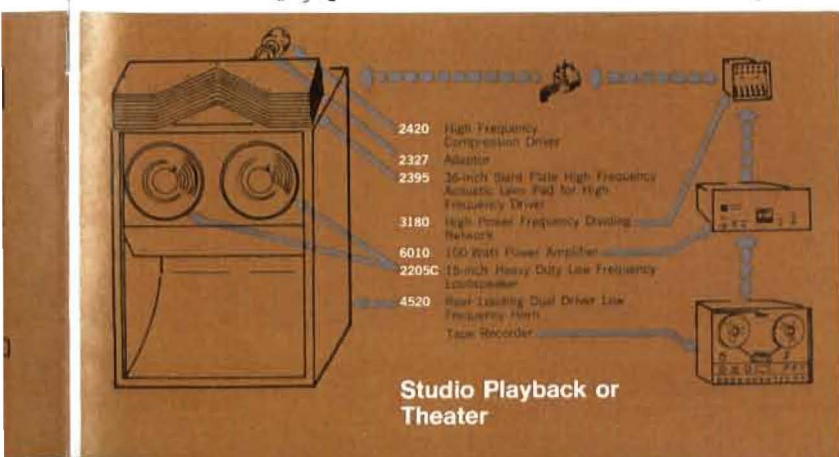
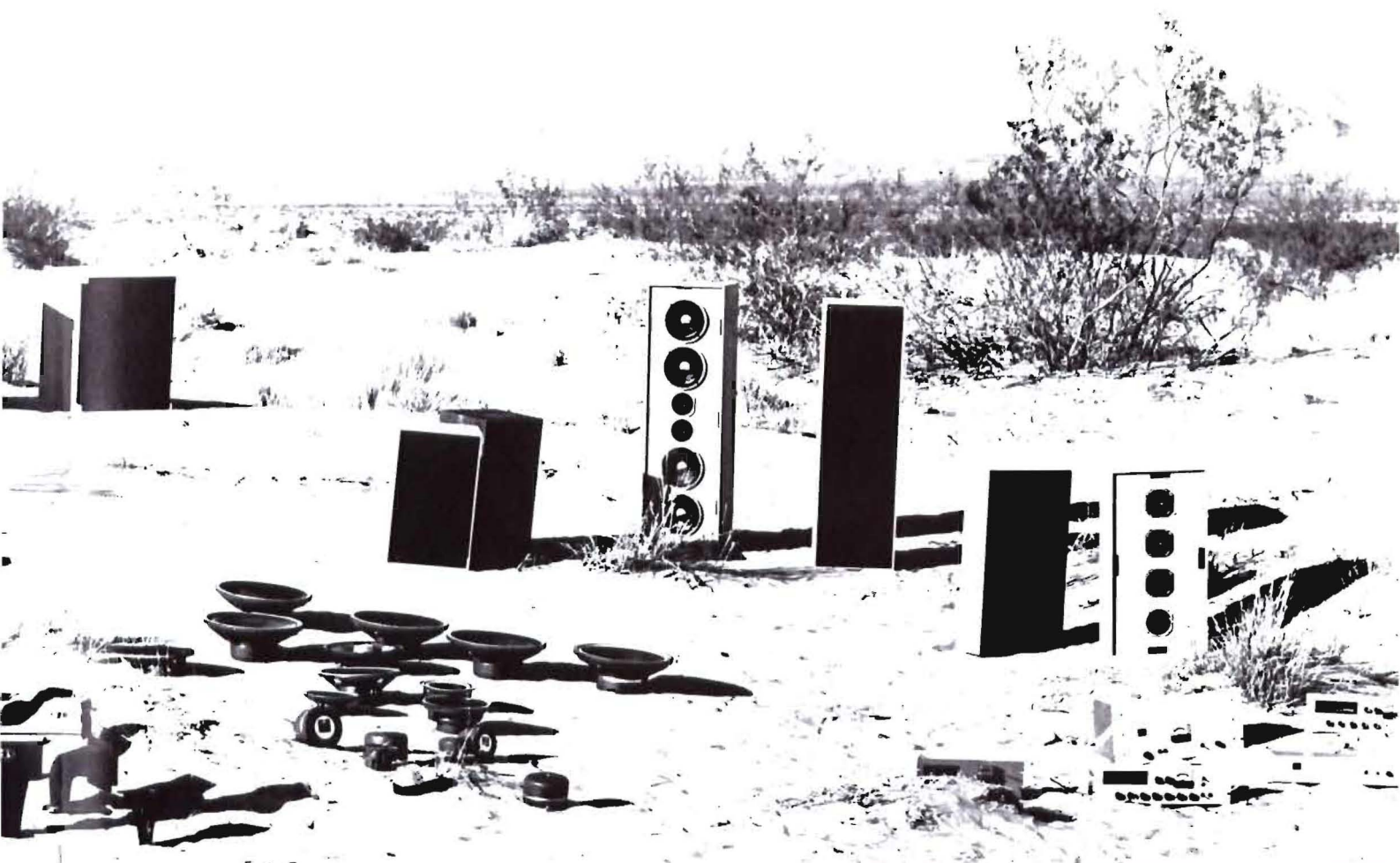




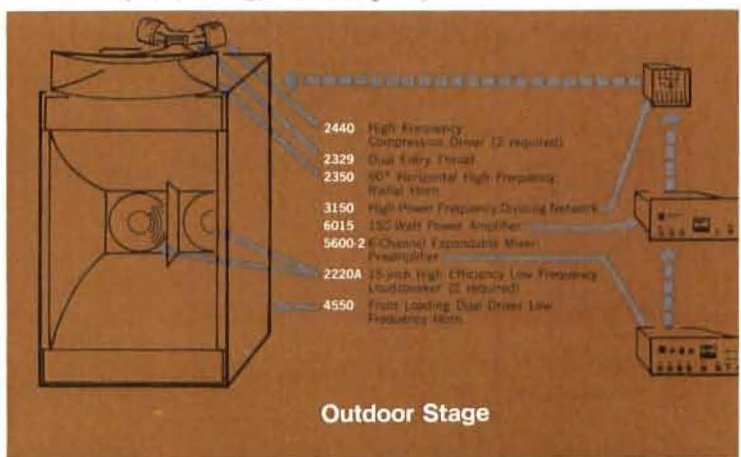
Medium Auditorium



Large Auditorium



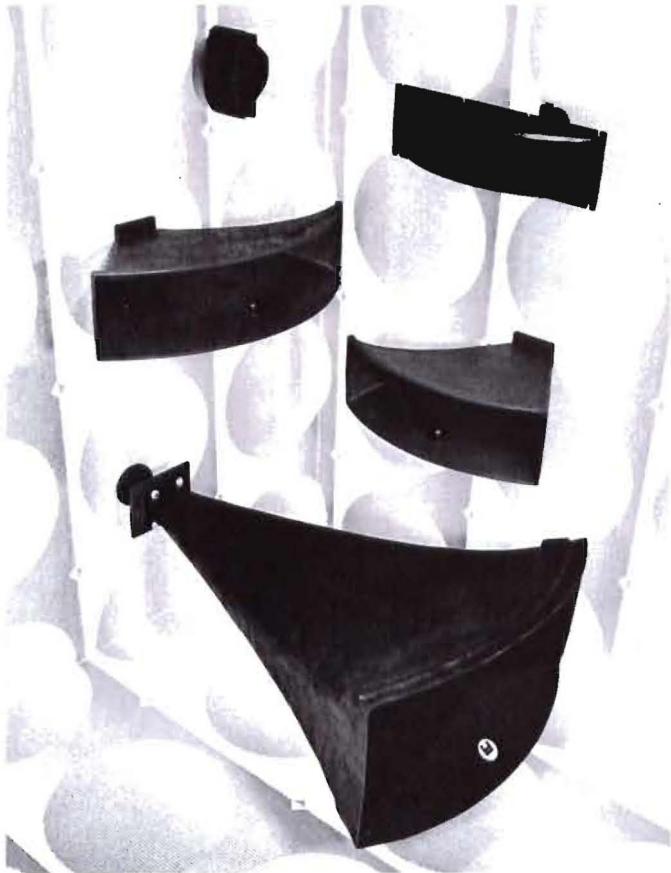
Studio Playback or Theater



Outdoor Stage



High Frequency Radial Horns



JBL radial horns offer exceptionally uniform frequency response in a tightly controlled pattern. There are no dividers or discontinuities; the waveform expands smoothly through a single, unobstructed path.

2340 Right Angle

Right-angle throat design maintains full coverage through the high frequency range. Specifications: 80° horizontal x 40° vertical pattern, 1-inch entry, 1200 Hz crossover. Cast aluminum. Net weight 6 lbs. 8 3/8" x 8 3/8" x 8 3/8" deep.

2345 Compact

Recommended for medium-throw reinforcement applications or portable loudspeaker systems. Specifications: 90° horizontal x 40° vertical pattern, 1-inch entry, 800 Hz crossover. Cast aluminum, damped. Net weight 20 lbs. 5 1/2" x 23" x 15 1/2" deep.

2350 90° Horizontal

For use in a variety of applications ranging from outdoor paging to low-distortion musical reinforcement; requires model 2328 or 2329 throat. Specifications: 90° horizontal x 40° vertical pattern, 500 Hz crossover. Cast aluminum, damped. Net weight 36 lbs. 8" x 24 1/8" x 20" deep.

2355 60° Horizontal

Identical to model 2350 in all respects except horizontal dispersion; requires model 2328 or 2329 throat. Specifications: 60° horizontal x 40° dispersion pattern, 500 Hz crossover. Net weight 36 lbs. 8" x 24 1/8" x 20" deep.

2356 Long Throw

Unique design using the radial expansion principal in long-throw applications. Dispersion is controlled throughout the full frequency range resulting in a favorable ratio of direct-to-reflected sound. Non-metallic composite construction achieves freedom from resonances with minimal weight. Specifications: 40° horizontal x 20° vertical pattern, 2-inch entry, usable to 300 Hz with model 2480 driver. Net weight 26 lbs. 16 1/2" x 33" x 48 3/4" deep.

Multicellular Horns



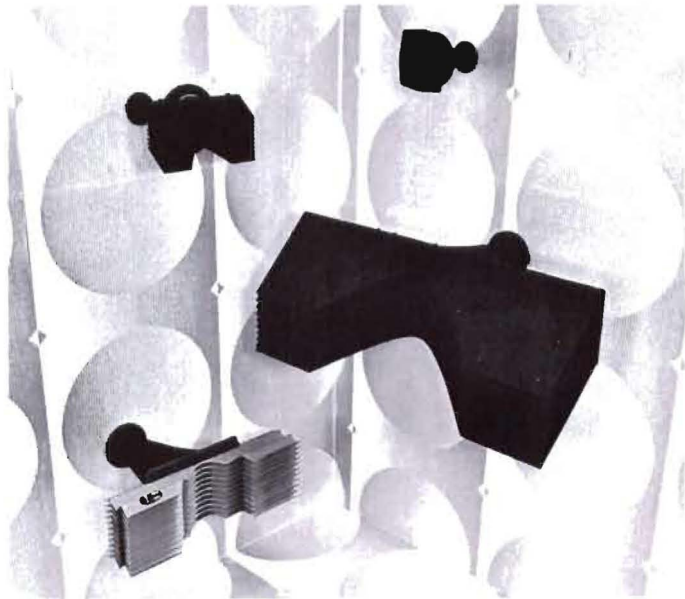
JBL multicellular horns are intended for applications requiring tight vertical pattern control in the 500 Hz crossover region. In general, they have better directivity in the vertical plane near crossover than other devices. These advantages must be weighed against inevitable interference effects in the region above 2000 Hz.

Available in the following configurations:

Model	Cells	Pattern Horiz. x Vert.	Dimensions	Net Weight
2360	2 x 3	60° x 40°	17" x 24" x 33"	33 lbs.
2361	1 x 3	60° x 20°	8" x 23" x 27 3/4"	21 lbs.
2365	2 x 4	80° x 40°	17" x 31" x 35"	50 lbs.
2370	2 x 5	100° x 40°	17" x 38" x 35"	59 lbs.
2380	3 x 6	120° x 60°	25" x 43" x 37"	102 lbs.

Note: Adaptor must be specified when ordering. Adaptors available for single or multiple applications in one- or two-inch dimensions to accommodate any Professional Series JBL driver.

High Frequency Acoustic Lens Assemblies



Massive, cast aluminum exponential horns are coupled to exclusive JBL acoustic lenses for wide dispersion and uniform frequency response. The "soft-edge" pattern is specially well suited to high quality music reproduction and short-throw reinforcement applications.

2305 Conical

Perforated plate acoustical lens intended for use as the high frequency element in a two or three frequency band integrated system. Horn and lens assembly should be flush mounted in an enclosure. Specifications: 90° conical pattern, 1-inch entry, 1200 Hz crossover. Net weight 6 lbs. 5 1/4" diameter x 7 3/4" deep.



2391 12-inch Slant Plate

Acoustical lens intended for use in two or three frequency band systems where the length of throw does not exceed 30 feet. May be used down to 800 Hz for monitor applications. Horn and lens should be mounted in a cabinet or on a baffle measuring at least 12" on each side. Specifications: 80° horizontal x 45° vertical pattern, 1-inch entry, 1200 Hz crossover. Net weight 6 lbs. Horn: 6 1/8" diameter x 7 3/4" deep. Lens: 6 1/8" x 10" x 2 3/8" deep.

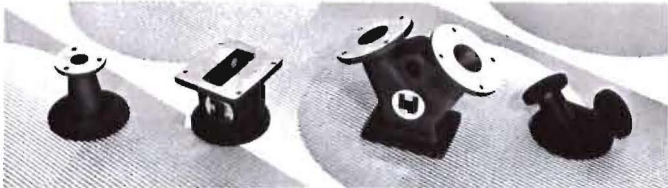
2390 20-inch Folded Plate

Acoustical lens backed by a 12-inch rectangular exponential horn to achieve a closely controlled pattern. Can be enclosed or mounted on a baffle of at least 20" x 20". Specifications: 100° horizontal x 45° vertical pattern, 2-inch entry, 800 Hz crossover. Net weight 22 lbs. Horn: 7 1/2" x 10 1/2" x 12" deep. Lens: 4 1/8" x 20" x 4" deep.

2395 36-inch Slant Plate

Exceptionally wide pattern lens backed by a 12-inch elliptical exponential horn for dispersion of midrange and high frequency sound. Specifications: 140° horizontal x 45° vertical pattern, 2-inch entry, 500 Hz crossover. Net weight 36 lbs. 12" x 36" x 19" deep.

High Frequency Horns-Lens Accessories



2327 Adaptor

Tapered for 2-inch horn entry to 1-inch driver. May be used in reverse with some loss above 8 kHz.

2328 Horn Throat

Throat section for 2350 and 2355 horns to one 2-inch driver.

2329 Dual Entry Throat

Throat section for 2350, 2355 and 2356 horns to two 2-inch drivers.

2332 Dual Entry Adaptor

Tapered for 2-inch horn entry to dual 1-inch drivers.

High Frequency Compression Drivers

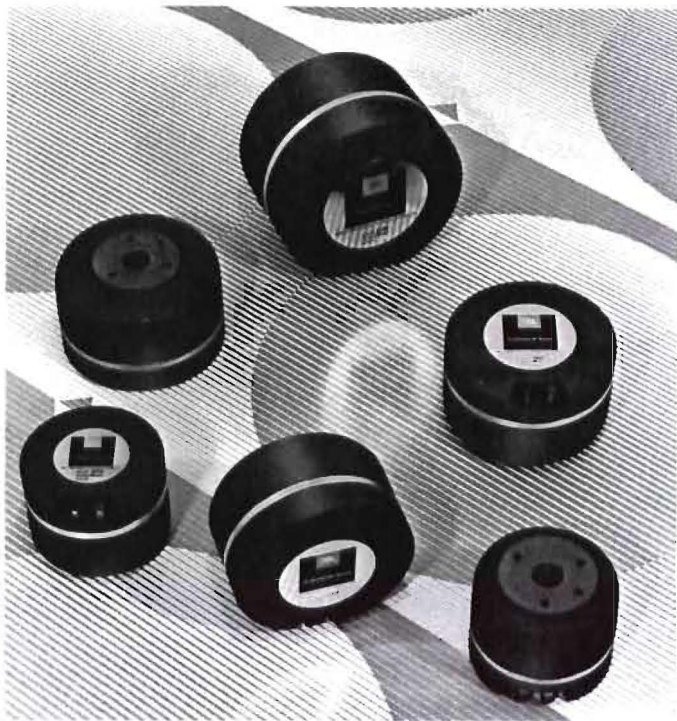
JBL high frequency compression drivers provide clear, crisp, natural reproduction of speech and music. They are ideally suited to high-quality sound reinforcement installations. Individually machined magnetic gaps, massive magnetic assemblies, edgewound aluminum ribbon voice coils, precision phasing assemblies and hydro-pneumatically formed diaphragms are found in every model

2405 Ultra-High Frequency

Operates above 7000 Hz, to extend response of any system into the ultra-sonic region. Designed to complement high frequency drivers, such as models 2440 and 2470.



Impedance	12 ohms
Flux Density	18,000 gauss
Power	30 Watts program power
Frequency Response	6,500-21,500 Hz, ±3 dB
Voice Coil Diameter	1 3/4"
Pattern	40° x 90°
Net Weight	6 lbs
Diameter	3 3/8"
Depth	3 1/4"



2410, 2420, 2440 Wide Range

Highest efficiency and widest, most linear response of all compression drivers available. Models 2410 and 2420 have exclusive pure silver impedance-controlling rings to maintain efficiency through the highest octave of driver response.

	2410	2420	2440
Impedance	16 ohms	16 ohms	16 ohms
Flux Density	16,000 gauss	19,000 gauss	20,500 gauss
Power	30 Watts	30 Watts	60 Watts
Frequency Response	500-15 kHz	500-20 kHz	500-10 kHz
Voice Coil Diameter	1 3/4"	1 3/4"	4"
Throat Diameter	1"	1"	2"
Net Weight	8 lbs.	11 lbs.	25 1/2 lbs.
Depth	3 3/8"	3 3/8"	5 1/4"

2460, 2470, 2480 High Power

Phenolic impregnated linen diaphragms and edgewound ribbon voice coils provide maximum power capacity and conversion efficiency. The 2480 is capable of generating extremely high sound pressure levels while maintaining crisp, natural reproduction of speech.

	2460	2470	2480
Impedance	16 ohms	16 ohms	16 ohms
Flux Density	16,000 gauss	19,000 gauss	20,500 gauss
Power	50 Watts	50 Watts	120 Watts
Frequency Response	500-8 kHz	500-12 kHz	300-6 kHz
Voice Coil Diameter	1 3/4"	1 3/4"	4"
Voice Coil Material	Copper	Aluminum	Copper
Throat Diameter	1"	1"	2"
Net Weight	8 lbs.	11 lbs.	25 1/2 lbs.
Depth	3 3/8"	3 3/8"	5 1/4"



Frequency Dividing Networks

All JBL professional dividing networks use 12 dB per octave parallel L-C circuits with additional conjugate elements to cancel out the inductive reactance of the low frequency loudspeaker. Highest quality components are used throughout — non-inductive paper or Mylar capacitors, individually calibrated low-loss inductors, heavy duty switches and resistors. High frequency shelving is accomplished with tapped autotransformers rather than conventional pads. Available models shown in the chart below.



3105, 3110, 3115, 3120, 3125 General Application

Professional frequency dividing networks intended for use with many combinations of high and low frequency drivers.

3150, 3180 High Power

Professional dividing networks designed primarily for theater or auditorium installations. Usually mounted outside the enclosure or in some other convenient location.

Model	Crossover Frequency	Program Power (Watts)	Frequency Impedance		High Frequency Attenuation
			Low (Ohms)	High (Ohms)	
3105	7000	50	12-16	12-16	Variable
3110	800	100	12-16	12-16	6-8-10 dB Switch
3115	500	100	12-16	12-16	6-8-10 dB Switch
3120	1200	75	8-12	12-16	0-3-6 dB Switch
3125	1200	100	For model 2150 only		Fixed atten.
3150	500	250	12-16	12-16*	0-1-2-3-4 Strap
3180	800	250	12-16	12-16*	0-1-2-3-4 Strap

\*Special strapping provisions allow matching to loads as low as 4 ohms, depending on attenuation desired.

Power Amplifiers

JBL Professional Series power amplifiers are highly reliable, conservatively rated units designed for professional sound engineering applications where a high standard of performance is required. All solid state silicon transistor power amplifiers with protective circuits to prevent damage from overload. VU meter standard. Choice of 50k ohm unbalanced or 15k ohm balanced input, 600 ohm balanced input optional. Self-contained forced air fan on model 6010 and 6015 for maximum reliability. 8 ohm, 25V and 70.7V output on all units. Standard rack mounting in 5 panel spaces.



6006 60-Watt

60 watts, 40-12 kHz at less than 1% THD; less than .1% THD at 1 kHz. Can be used without output transformer for 4 ohm load.



6010 100-Watt

100 watts, 40-12 kHz at less than 1% THD; less than .1% THD at 1 kHz. Can be used without output transformer for 4 ohm load.



6015 150-Watt

150 watts, 40-12 kHz at less than 1% THD; less than .1% THD at 1 kHz. Can be used without output transformer for 4 ohm load.

## Preamplifier



### 5101 1-Mic Preamp, Self-powered

A one channel utility preamplifier which raises a signal from microphone level to +10 dBm line level. This self-powered unit has a rating of less than .25% THD with less than 1% IM distortion. Possessing a 600 ohm output (balanced or unbalanced), its equivalent input noise is -122 dBm. Mounts in a 1 3/4" rack panel space. Net weight 6 1/2 lbs. 19" x 1 3/4" x 5 1/2" deep.

## Mixer-Preamplifiers

Inputs and outputs of JBL Professional Series Mixer/Preamplifiers are designed for maximum flexibility and ease of installation in a wide variety of professional sound applications.

All solid state silicon transistor circuitry. Low noise FET microphone preamplifiers. VU meter, headphone monitor jack and cue switch.

Program inputs accept phono cartridge, tape head, tuner or other similar source with proper plug-in accessories. All microphone inputs convertible to program level. .5% IM distortion -122 dBm equivalent input noise.

Output noise 85 dB below full output with master gain control closed. 65 dB with master and one microphone at full gain. Standard rack mounting in 3 panel spaces.



### 5303 3-Channel Expandable

Mixes two microphone preamps and one high level program channel. With the addition of the 5190 Microphone Preamp Expander Module, the 5303 converts to a 5-channel mixer consisting of four microphone preamps and one program channel. Output is +8 dBm at less than .25% THD (+18 dBm with internal connection). Net weight 8 1/2 lbs. 19" x 5 1/4" x 10" deep.



### 5600-2 6-Channel Expandable

Incorporates all of the features of the 5303. Mixes four microphone preamps and two high level program channels. With the addition of the 5190 Microphone Preamp Expander Module, the 5600-2 will convert to an 8-channel mixer consisting of six microphone preamps and two high level program channels. Net weight 8 1/2 lbs. 19" x 5 1/4" x 10" deep.

## Blank Panels

Non-glare baked enamel, light gray

9101	1-panel space	1 3/4" x 19"
9102	2-panel spaces	3 1/2" x 19"
9103	3-panel spaces	5 1/4" x 19"
9104	4-panel spaces	7" x 19"
9105	5-panel spaces	8 3/4" x 19"
9106	6-panel spaces	10 1/2" x 19"





## Special Purpose Electronics

300L

### 7124 AGC Amplifier

Used with indoor and outdoor paging systems to maintain a high intelligibility program signal at a predetermined level above background noise. The unit samples ambient noise from a pre-selected area and varies output level accordingly. The microphone sensing circuit is preamplified. Control circuitry uses FET's to provide continuous change in program level eliminating the "stepping effect." The unit installs between the preamp and power amp. Mounts in two rack panel spaces. Net weight 10 lbs.  $3\frac{1}{2}$ " x 19" x 6" deep.

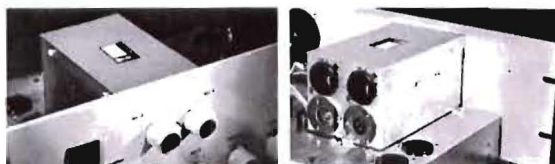


### 7125 Safety Matrix

Provides a "fail safe" method of connecting two amplifiers to a common load. Combines the 70V output of two equal power booster amplifiers on one circuit for greater reliability. Enables both amplifiers to be paralleled safely. Failure of either amplifier transfers the entire load to the surviving amplifier and disconnects the failed amplifier resulting in a power loss limited to 3dB.

When both amplifiers are operational, an autotransformer combines both outputs in precise phase for full power doubling. Lights on the front panel indicate operational status of both amplifiers. Provisions are available for adding remote alarm signal. A "zero" center synchronization meter is provided for balancing amplifier outputs. Operation and reset function are completely automatic. Mounts in three panel rack spaces. Net weight 20 lbs.  $5\frac{1}{4}$ " x 19" x  $5\frac{3}{4}$ " deep.

## Amplifier Accessories



### 5190 Microphone Preamp Expander Module

Adds two preamp channels to models 5303 and 5600-2 using low noise FET circuitry identical to the master units. Installation is accomplished with three screws and a five-pin plug. Controls appear through labeled holes concealed behind a removable cover plate on the main panel.



### 5191 Magnetic Phono/Tapehead Preamp

For use with models 5303 and 5600-2. Plug-in module converts the 50k ohm unbalanced input to accept a magnetic phono or high impedance (standard) tapehead. The change from magnetic phono to tapehead equalization is accomplished by changing an internal jumper wire. Magnetic phono equalization is standard RIAA, and tapehead equalization is  $7\frac{1}{2}$  ips.



### 5195 Matching/Bridging Transformer

Provides 600 ohm matching or 15k ohm bridging balanced input. Frequency response 50-20,000 Hz with less than 1% distortion at +20 dBm. Mu-metal case and hum-bucking windings provide 90 dB of shielding.



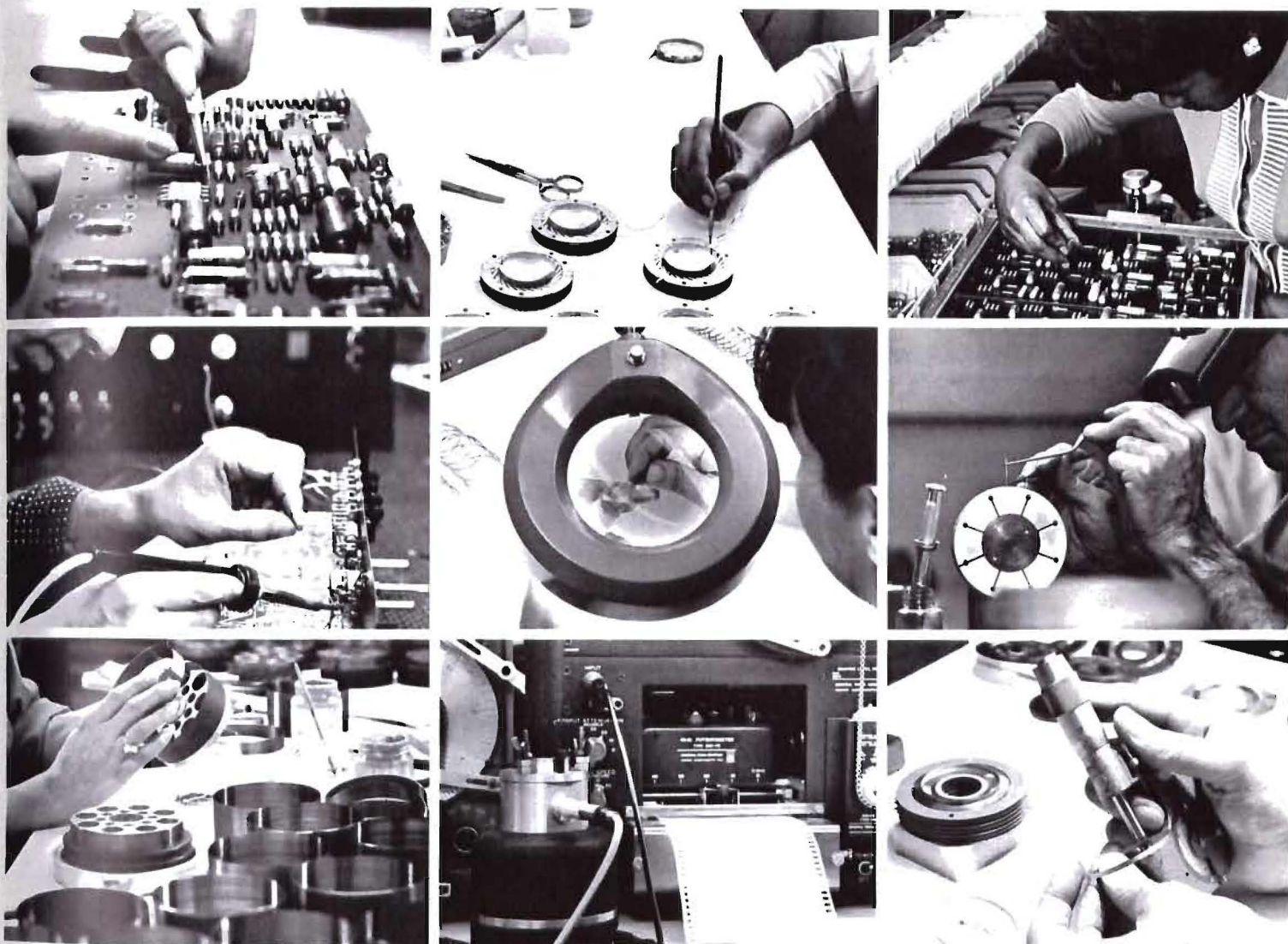
### 5901 Universal Microphone Input Transformer

Provides balanced inputs for 150 ohm microphones. Frequency response 30-20,000 Hz with less than 1% distortion at -55 dBm. Mu-metal case and hum-bucking windings provide effective shielding of 90 dB.



### 5904 "T" Pad

Attenuates the signal and converts any of the standard microphone inputs to a standard 50k ohm unbalanced input with exactly the same sensitivity as the standard 50k ohm unbalanced program input.

**JBL****Professional Series****Professional Series Warranty**

Every JBL Professional Series product, whether electronic or transducer, is guaranteed against defects in material and workmanship for a period of two years. JBL will replace defective parts and make necessary repairs under this warranty if our examination reveals evidence of faulty workmanship or material. The warranty does not cover damage caused by misuse, accident or neglect. JBL retains the exclusive right to make such determination on the basis of factory inspection.

If it is impractical to return the product to the factory, please write to JBL describing the difficulty or malfunction. JBL may, at its option, establish alternative repair procedures or furnish replacement parts as appropriate.

Products returned to the factory must be shipped prepaid and will not be accepted unless written authorization has first been obtained. The warranty on JBL products shall remain valid only if repairs are performed by JBL or under its authorized procedures, and provided that the serial number on the unit has not been defaced or removed.



Professional Division

James B. Lansing Sound, Inc. 3249 Casitas Ave., Los Angeles, California 90039



**JBL**

**Professional Series**

Catalog PE71, 1/73

Printed in U.S.A.